

ABSTRACT

A recombinant non-human animal having an inactivated *lats* gene is described. A *lats* knock-out mouse is exemplified. Because mice disrupted for the *lats* gene develop a variety of tumors, are susceptible to induction of skin tumors by exposure to carcinogens, and exhibit pituitary dysfunction, they have utility in screening for compounds effective to treat or prevent cancer or pituitary disorders. Compounds can be screened for activity in treating or preventing skin cancer in recombinant non-human animals which have an inactivated *lats* gene and in which skin tumors have been induced by exposure to carcinogens. Methods for treatment of cancers refractory to treatment with chemotherapy or radiation therapy by using a therapeutic that promotes *lats* function are also described. Additional methods are described for the treatment or prevention of diseases and disorders associated with aberrant levels of *cdc2* activity with a therapeutic that either promotes, inhibits or antagonizes *lats* function.